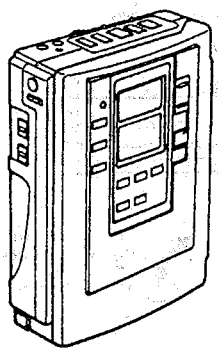
S/M Code No.89 – 026 DATE OF ISSUE 5/1989 – I

AIWA®

HS-JX303

SERVICE MANUAL



STEREO RADIO CASSETTE RECORDER

• BASIC TAPE MECHANISM : α – 2 • TYPE. H,E,K,Z

SPECIFICATIONS

Frequency range:

FM: 87.5/87.5 — 108.1/108 MHz
(200/50kHz STEP)
AM: 530/531 — 1600/1602 kHz
(10/9 kHz STEP)

Maximum output:
10mW + 10mW (EIAJ/32Ω)
[(12mW + 12mW (EIAJ/16Ω)]

Power source:
Battery DC 2V, rechargeable lead battery (PB-3) × 1
Battery DC 3V, LR-03 (UM-4, AAA, R03) × 2
Domestic AC power (using AC adaptor)

Battery life:
Rechargeable lead battery (AIWA)
Approx. 2 hours (EIAJ, REC/1 hour recharging)
Approx. 2 hours [EIAJ, PB 1mW/15 minutes (H model is 20 minutes) recharging]
Approx. 3 hours (EIAJ, PB 1mW/1 hour recharging)

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- "Dolby", the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

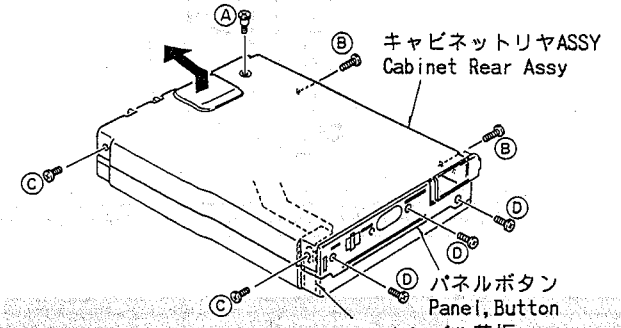
AIWA Co., Ltd. Tokyo Japan

Printed in Japan

DISASSEMBLY INSTRUCTIONS

1. Rear Cabinet Assembly and Button Panel Removal
   1) Remove 5 screws (Ⓐ×1、Ⓑ×2、Ⓒ×2) holding the rear cabinet assembly.
   2) Remove 3 screws (Ⓓ×3) holding the button panel. (See Figure-1)

A	Hinge screw M1.4
B	V+1.4-3
C	V+1.4-2
D	Special screw V+1.4-3



注) このビスを取り付ける時フレキに注意する。
Note) Be careful of the flexible circuit board when tightening this screw.

Fig-1

2. Center Frame Removal
   1) Release the hook in the direction of arrow ① , and while releasing the hooks in the directions of arrows ② and ③ , remove the center frame. Be careful because 2 knobs come off at this time. (See Figure-2)

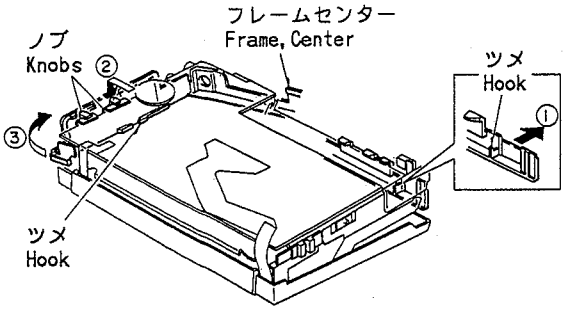


Fig-2

2-1. Reinstalling the knobs (See Figure-3)
1) Reinstall the knobs with the main circuit board open (See Figure-4), reinstall the center frame and then the main circuit board in the direction of the arrow.

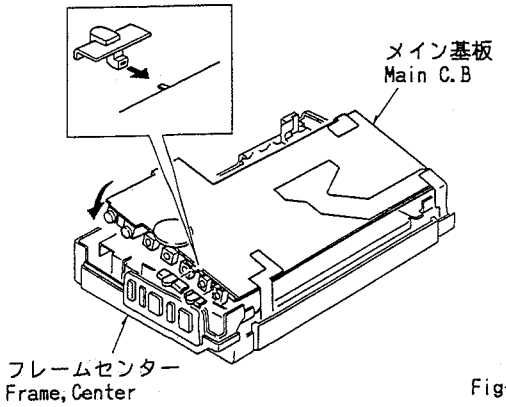


Fig-3

3. Main Circuit Board Removal
   1) Remove 4 screws (Ⓐ×2、Ⓑ×1、Ⓒ×1) and then remove the main circuit board in the direction of the arrow. (See Figure-4)

   Note) Connection of external power supply
   - The main unit does not have an external DC jack. When checking the operation (conducting) by opening the main circuit board, stand pins on patterns (B+、GND) and supply power using alligator clips, etc. (See Figure-4)

A	V+1.4-1.6
B	Screw M1.4-2
C	V+1.4-1.4

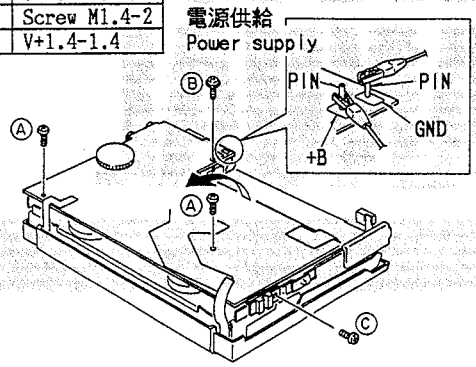


Fig-4

4. Motor Circuit Board Removal
   1) Remove 2 screws, unsolder the soldered section and remove the circuit board in the direction of the arrow. (See Figure-5)

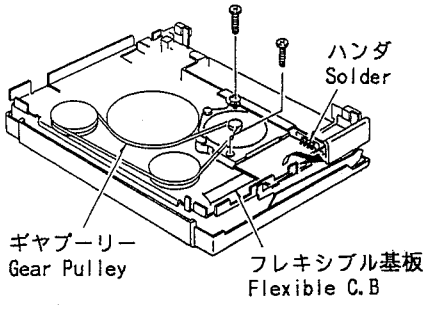


Fig-5

5. Azimuth Adjustment
   - Adjust the azimuth in both the forward and reverse tape running modes.
   - Apply locking paint to the tips of the adjustment screws (near the head). When either the forward or reverse mode is set, the screw corresponding to the mode can be seen through the hole in the main circuit board as shown in the figure. Loosen this screw by 1～1.5 turns and the adjust it. (See Figure-6)
   - After adjustment is completed, wipe off the locking paint from the screws.

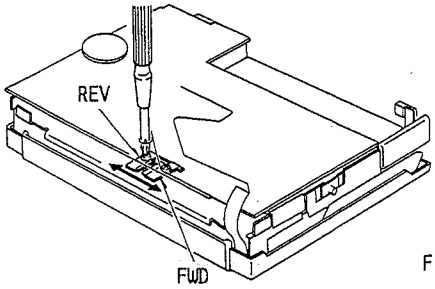


Fig-6

ELECTRICAL MAIN PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
=== IC ===		
	87-001-147-010	IC,BA1102FS
	87-020-498-010	IC,BA3818F
	87-001-373-010	IC,CXA1278N
	87-001-707-010	IC,T8643A
	87-020-234-010	IC,TA7688F(S)
	87-001-145-010	IC,TA8126F
	87-001-548-010	IC,TA8132AF
	87-001-550-010	IC,TC7S04F
	87-001-585-010	IC,TC7S32F
	87-001-549-010	IC,TC9308AF-011
	87-001-513-010	IC,TC9311F-014
	87-001-151-010	IC,TD6134F1
=== TRANSISTOR ===		
	89-508-804-010	FET,2SK880Y
	89-508-814-010	FET,2SK881Y
	89-112-134-010	TRANSISTOR,2SA1213Y
	89-113-625-010	TRANSISTOR,2SA1362GR
	89-115-864-010	TRANSISTOR,2SA1586Y
	89-115-884-010	TRANSISTOR,2SA1588Y
	89-341-165-010	TRANSISTOR,2SC4116GR
	89-342-132-010	TRANSISTOR,2SC4213B
	89-342-153-010	TRANSISTOR,2SC4215(O)
	87-026-342-010	TRANSISTOR,DTC144EU
	87-026-472-010	TRANSISTOR,HN1A01F
	87-026-466-010	TRANSISTOR,HN1C01F Y
	87-026-470-010	TRANSISTOR,HN1C03F (B)
	87-026-358-010	TRANSISTOR,IMD6
	87-026-411-010	TRANSISTOR,RN1304
	87-026-414-010	TRANSISTOR,RN1307
	87-026-475-010	TRANSISTOR,RN1607
	87-026-476-010	TRANSISTOR,RN1610
	87-026-479-010	TRANSISTOR,RN2610
	87-026-481-010	TRANSISTOR,RN4607
=== DIODE ===		
	87-001-599-010	DIODE,CHIP 1MN11
	87-001-166-010	DIODE,CHIP 1SS301
	87-001-167-010	DIODE,CHIP 1SS302
	87-001-221-010	DIODE,CHIP 1SS319
	87-001-553-010	DIODE,CHIP 1SS322
=== MAIN CIRCUIT BOARD SECTION ===		
C1	★87-010-193-010	CAP,CHIP S 0.033-25
C2	★87-012-360-010	CAP,CHIP S 1-10
C3	★87-010-196-010	CAP,CHIP S 0.1-25
C4	★87-010-186-010	CAP,CHIP S 4700P-50
C5	★87-015-923-010	CAP,CHIP TANTALUM 0.22-4
C6	★87-010-082-010	CAP,ELECT 220-4
C7	★87-010-178-010	CAP,CHIP S 1000P-50
C8	★87-010-178-010	CAP,CHIP S 1000P-50
C9	★87-010-082-010	CAP,CHIP ELECT 220-4
C10	★87-010-114-010	CAP,CHIP ELECT 47-4
C11	★87-010-197-010	CAP,CHIP S 0.01-25
C12	★87-010-195-010	CAP,CHIP S 0.068-25
C101	★87-010-175-010	CAP,CHIP S 560P-50 SL
C102	★87-010-175-010	CAP,CHIP S 560P-50 SL
C103	★87-010-215-010	CAP,CHIP TANTALUM 0.047-35
C104	★87-010-215-010	CAP,CHIP TANTALUM 0.047-35
C105	★87-010-188-010	CAP,CHIP S 6800P-50
C106	★87-010-188-010	CAP,CHIP S 6800P-50
C107	★87-010-746-010	CAP,CHIP TANTALUM 10-4
C108	★87-010-746-010	CAP,CHIP TANTALUM 10-4
C109	★87-010-197-010	CAP,CHIP S 0.01-25
C110	★87-010-197-010	CAP,CHIP S 0.01-25
C111	★87-010-182-010	CAP,CHIP S 2200P-50
C112	★87-010-182-010	CAP,CHIP S 2200P-50
C113	★87-010-192-010	CAP,CHIP S 0.022-50
C114	★87-010-192-010	CAP,CHIP S 0.022-50
C115	★87-012-142-010	CAP,CHIP S 0.33-16
C116	★87-012-142-010	CAP,CHIP S 0.33-16
C117	★87-010-180-010	CAP,CHIP S 1500P-50
C118	★87-010-180-010	CAP,CHIP S 1500P-50
C119	★87-010-747-010	CAP,CHIP TANTALUM 22-4
C120	★87-010-746-010	CAP,CHIP TANTALUM 10-4
C121	★87-010-746-010	CAP,CHIP TANTALUM 10-4
C122	★87-010-746-010	CAP,CHIP TANTALUM 10-4
C123	★87-010-746-010	CAP,CHIP TANTALUM 10-4
C124	★87-012-140-010	CAP,CHIP S 470P-50 CH
C125	★87-010-181-010	CAP,CHIP S 1800P-50
C126	★87-010-197-010	CAP,CHIP S 0.01-25
C127	★87-010-197-010	CAP,CHIP S 0.01-25
C128	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4
C129	★87-010-197-010	CAP,CHIP S 0.01-25
C130	★87-010-183-010	CAP,CHIP S 2700P-50
C131	★87-010-197-010	CAP,CHIP S 0.01-25
C132	★87-010-197-010	CAP,CHIP S 0.01-25
C133	★87-010-196-010	CAP,CHIP S 0.1-25
C134	★87-010-196-010	CAP,CHIP S 0.1-25
C135	★87-010-178-010	CAP,CHIP S 1000P-50
C136	★87-010-178-010	CAP,CHIP S 1000P-50
C137	★87-010-178-010	CAP,CHIP S 1000P-50
C138	★87-010-178-010	CAP,CHIP S 1000P-50
C139	★87-010-193-010	CAP,CHIP S 0.033-25
C140	★87-010-193-010	CAP,CHIP S 0.033-25
C141	★87-010-186-010	CAP,CHIP S 4700P-50
C142	★87-010-186-010	CAP,CHIP S 4700P-50
C143	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4
C144	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4
C145	★87-010-197-010	CAP,CHIP S 0.01-25
C146	★87-010-197-010	CAP,CHIP S 0.01-25
C147	★87-010-193-010	CAP,CHIP S 0.033-25
C148	★87-010-193-010	CAP,CHIP S 0.033-25
C149	★87-010-196-010	CAP,CHIP S 0.1-25
C150	★87-010-196-010	CAP,CHIP S 0.1-25
C151	★87-012-360-010	CAP,CHIP S 1-10
C152	★87-012-360-010	CAP,CHIP S 1-10
C153	★87-010-114-010	CAP,ELECT 47-4
C154	★87-012-360-010	CAP,CHIP S 1-10
C155	★87-010-195-010	CAP,CHIP S 0.068-25
C156	★87-010-195-010	CAP,CHIP S 0.068-25
C157	★87-010-195-010	CAP,CHIP S 0.068-25
C158	★87-010-195-010	CAP,CHIP S 0.068-25
C159	★87-010-192-010	CAP,CHIP S 0.022-50
C160	★87-010-192-010	CAP,CHIP S 0.022-50
C161	★87-012-142-010	CAP,CHIP S 0.33-16
C162	★87-012-142-010	CAP,CHIP S 0.33-16
C165	★87-012-360-010	CAP,CHIP S 1-10
C166	★87-012-360-010	CAP,CHIP S 1-10
C167	★87-012-140-010	CAP,CHIP S 470P-50 CH
C168	★87-012-140-010	CAP,CHIP S 470P-50 CH
C169	★87-010-178-010	CAP,CHIP S 1000P-50
C170	★87-010-178-010	CAP,CHIP S 1000P-50
C171	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4
C172	★87-010-114-010	CAP,ELECT 47-4
C173	★87-012-360-010	CAP,CHIP S 1-10
C174	★87-010-082-010	CAP,ELECT 220-4

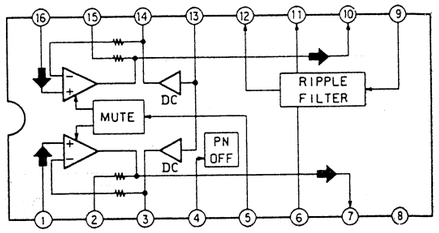
REF.NO.	PART NO.	DESCRIPTION
C175	★87-012-142-010	CAP,CHIP S 0.33-16
C176	★87-012-142-010	CAP,CHIP S 0.33-16
C177	★87-010-588-010	CAP,ELECT 220-2
C178	★87-010-588-010	CAP,ELECT 220-2
C179	★87-010-463-010	CAP,CHIP ELECT 100-4
C180	★87-010-473-010	CAP,CHIP ELECT 47-4
CP1	87-026-248-010	PHOTO SENSOR ON2270Q2
J1	87-009-050-010	JACK 3.5 BK(PHONES)
J2	87-009-050-010	JACK 3.5 BK(REMOTE/MIC)
L101	★87-003-231-010	COIL S 1UH
L102	★87-003-231-010	COIL S 1UH
L103	★87-003-231-010	COIL S 1UH
L104	★87-003-231-010	COIL S 1UH
S6	87-036-145-010	SLIDE SW(REMOTE)
S7	87-036-123-010	SLIDE SW(REVERSE MODE)
S8	87-036-144-010	PUSH SW(CASSETTE DETECTION)
S12	87-036-083-010	PUSH SW(REMOTE)
S101	87-036-152-010	SLIDE SW(FWD/REV)
S102	87-036-143-010	SLIDE SW(REC/PLAY)
S103	87-036-123-010	SLIDE SW(DOLBY NR)
S104	87-036-123-010	SLIDE SW(TAPE SELECT)
S106	87-036-123-010	SLIDE SW(DSL)
SFR1	★87-024-215-010	SFR 330K
SFR101	★87-024-209-010	SFR 10K
SFR102	★87-024-209-010	SFR 10K
T101	★87-007-246-010	COIL OSC BIAS
TH1	★87-026-244-010	THERMISTOR UTH1021A
VR101	87-024-155-010	VOLUME 20K(A)(VOLUME)
=== SWITCH CIRCUIT BOARD SECTION ===		
S1	84-437-608-010	TACT SW(STOP/DIR)
S2	84-437-608-010	TACT SW(FFWD)
S3	84-437-608-010	TACT SW(REW)
S4	84-437-608-010	TACT SW(REC)
S5	84-437-608-010	TACT SW(PLAY/DIR)
=== TUNER CIRCUIT BOARD SECTION ===		
BAT1	★84-462-614-010	CL BATT
BPF1	★87-008-406-010	BPF GFMB1
C203	★87-012-275-010	CAP,CHIP 1200P-50
C204	★87-012-271-010	CAP,CHIP 560P-50
C205	★87-012-275-010	CAP,CHIP 1200P-50
C206	★87-012-275-010	CAP,CHIP 1200P-50
C208	★87-012-337-010	CAP,CHIP 56P-50 CH
C209	★87-010-194-010	CAP,CHIP S 0.047-25
C212	★87-012-184-010	CAP,CHIP 33P-50
C213	★87-010-194-010	CAP,CHIP S 0.047-25
C214	★87-012-180-010	CAP,CHIP 22P-50 CH
C215	★87-010-194-010	CAP,CHIP S 0.047-25
C216	★87-012-276-010	CAP,CHIP 1200P-50
C217	★87-010-194-010	CAP,CHIP S 0.047-25
C219	★87-010-243-010	CAP,CHIP TANTALUM 10-4
C220	★87-012-286-010	CAP,CHIP 0.01-50
C221	★87-012-286-010	CAP,CHIP 0.01-50
C223	★87-012-286-010	CAP,CHIP 0.01-50
C224	★87-010-196-010	CAP,CHIP S 0.1-25
C225	★87-012-286-010	CAP,CHIP 0.01-50
C226	★87-012-273-010	CAP,CHIP 820P-50
C227	★87-010-198-010	CAP,CHIP S 0.022-25
C228	★87-010-194-010	CAP,CHIP S 0.047-25
C229	★87-010-194-010	CAP,CHIP S 0.047-25
C230	★87-012-271-010	CAP,CHIP 560P-50
C231	★87-010-452-010	CAP,CHIP 1-16
C232	★87-010-452-010	CAP,CHIP 1-16

REF.NO.	PART NO.	DESCRIPTION
C233	★87-010-195-010	CAP,CHIP S 0.068-25
C234	★87-010-196-010	CAP,CHIP S 0.1-25
C235	★87-010-196-010	CAP,CHIP S 0.1-25
C238	★87-012-270-010	CAP,CHIP 470P-50
C239	★87-012-176-010	CAP,CHIP 15P-50 CH
C240	★87-012-282-010	CAP,CHIP 4700P-50
C241	★87-010-483-010	CAP,ELECT 220-4
C242	★87-010-193-010	CAP,CHIP S 0.033-25
C243	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4
C244	★87-012-282-010	CAP,CHIP 4700P-50
C245	★87-012-286-010	CAP,CHIP 0.01-50
C246	★87-010-428-010	CAP,CHIP S 0.015
C247	★87-010-428-010	CAP,CHIP S 0.015
C248	★87-012-280-010	CAP,CHIP 3300P
C249	★87-012-360-010	CAP,CHIP S 1-10
C250	★87-012-360-010	CAP,CHIP S 1-10
C251	★87-012-198-010	CAP,CHIP 180P-50 CH
C252	★87-012-282-010	CAP,CHIP 4700P-50
C255	★87-010-196-010	CAP,CHIP S 0.1-25
C256	★87-012-275-010	CAP,CHIP 1200P-50
C257	★87-012-286-010	CAP,CHIP 0.01-50
C258	★87-012-182-010	CAP,CHIP 27P-50 CH
C259	★87-012-286-010	CAP,CHIP 0.01-50
C260	★87-010-243-010	CAP,CHIP TANTALUM 10-4
C262	★87-010-243-010	CAP,CHIP TANTALUM 10-4
C263	★87-012-286-010	CAP,CHIP 0.01-50
C264	★87-010-198-010	CAP,CHIP S 0.022-25
C265	★87-010-505-010	CAP,CHIP TANTALUM 1-16
C266	★87-012-282-010	CAP,CHIP 4700P-50
C267	★87-012-195-010	CAP,CHIP 100P-50 CH
C268	★87-012-184-010	CAP,CHIP 33P-50 CH
C269	★87-010-196-010	CAP,CHIP S 0.1-25
C270	★87-012-286-010	CAP,CHIP 0.01-50
C271	★87-010-196-010	CAP,CHIP S 0.1-25
C272	★87-012-286-010	CAP,CHIP 0.01-50
C273	★87-012-276-010	CAP,CHIP 1500P-50
C274	★87-012-172-010	CAP,CHIP 10P-50 CH
C275	★87-012-199-010	CAP,CHIP 220P-50 CH
C276	★87-012-195-010	CAP,CHIP 100P-50 CH
C277	★87-012-142-010	CAP,CHIP S 0.33-16
C278	★87-010-640-010	CAP,CHIP TANTALUM 22-4
C279	★87-012-282-010	CAP,CHIP 4700P-50
C280	★87-012-286-010	CAP,CHIP 0.01-50
C281	★87-012-195-010	CAP,CHIP 100P-50 CH
C284	★87-012-286-010	CAP,CHIP 0.01-50
C285	★87-012-286-010	CAP,CHIP 0.01-50
C286	★87-012-286-010	CAP,CHIP 0.01-50
C287	★87-012-286-010	CAP,CHIP 0.01-50
C288	★87-012-162-010	CAP,CHIP 1P-50 CH
C289	★87-012-360-010	CAP,CHIP S 1-10
C290	★87-010-452-010	CAP,CHIP 1-16
C291	★87-012-287-010	CAP,CHIP 4700P-50
C294	★87-012-286-010	CAP,CHIP 0.01-50
C295	★87-012-191-010	CAP,CHIP 68P-50
C297	★87-012-182-010	CAP,CHIP 27P-50 CH
C298	★87-012-286-010	CAP,CHIP 0.01-50
CF200	★87-008-399-010	FILTER CF 10.7MHZ
CF201	★87-008-399-010	FILTER CF 10.7MHZ
CF202	★87-008-399-010	FILTER CF 10.7MHZ
CF203	★87-008-396-010	FILTER CF 450K
CF204	★87-008-397-010	FILTER SAW456F18
CT202	★87-011-189-010	TRIMER CHIP CTZ-10A
CT203	★87-011-192-010	TRIMER CHIP CTZ-30C
CT204	★87-011-189-010	TRIMER CHIP CTZ-10A

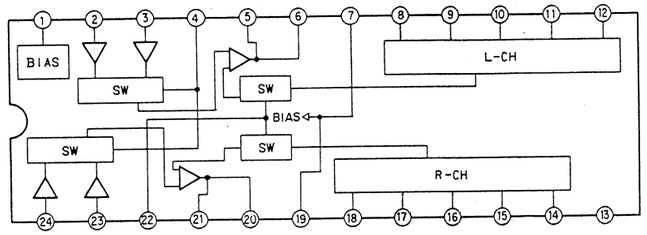
REF.NO.	PART NO.	DESCRIPTION
CT205	★87-011-192-010	TRIMER CHIP CTZ-30C
D222	87-001-708-010	DIODE,VAR CHIP 1SV228
D224	87-001-708-010	DIODE,VAR CHIP 1SV228
D225	★87-026-435-010	DIODE,VAR CHIP KV1560
L201	★84-500-613-010	COIL LOADING
L203	★84-500-622-010	COIL FM RF
L205	★84-500-621-010	COIL FM OSC
L206	★87-003-241-010	COIL S 4.7UH
L208	★87-003-247-010	COIL 100UH
L209	★87-006-173-010	COIL DD 5CDL
L210	★87-003-243-010	COIL S 10UH
L211	★87-003-243-010	COIL S 10UH
L212	★87-006-172-010	COIL IFT 450K MW
LCD1	84-500-608-010	LCD ASSY(DISPLAY)
LED201	87-001-590-010	LED GL1PR111(OPE./BATT.)
S201	87-036-146-010	SLIDE SW(BAND)
S202	87-036-123-010	SLIDE SW(AM/FM STEP)
S203	87-036-171-010	TACT SW(TIMER)
S204	87-036-171-010	TACT SW(SLEEP)
S206	87-036-171-010	TACT SW(STORE/SET)
S207	87-030-152-010	TACT SW(TUNING DOWN/MIN)
S208	87-030-152-010	TACT SW(TUNING UP/HOUR)
S209	87-030-152-010	TACT SW(PRESET CLOCK/1)
S210	87-030-152-010	TACT SW(PRESET CLOCK/2)
S211	87-030-152-010	TACT SW(PRESET 3)
S212	87-030-152-010	TACT SW(PRESET 4)
S213	87-030-152-010	TACT SW(PRESET 5)
X201	★87-030-121-010	XTAL DT-38 75K
=== REGULATOR CIRCUIT BOARD SECTION ===		
C263	★84-439-620-010	CAP,ELECT 470-4
J3	87-049-549-010	JACK DC(DC 2V)
TM2	84-435-246-010	CONNECTOR ASSY 1.4(BATT.TERMINAL)
=== RELAY FLEXIBLE CIRCUIT BOARD SECTION ===		
PCB-E	84-500-607-010	RELAY FLEXIBLE CIRCUIT BOARD
=== MOTOR FLEXIBLE CIRCUIT BOARD SECTION ===		
PCB-F	84-500-614-010	MOTOR FLEXIBLE CIRCUIT BOARD
=== HEAD FLEXIBLE CIRCUIT BOARD SECTION ===		
	84-497-609-010	HEAD FLEXIBLE CIRCUIT BOARD
	86-550-602-010	HEAD ASSY
RPH	84-497-607-010	HEAD ASSY(W/PCB-G)
=== MOTOR GOVERNOR CIRCUIT BOARD SECTION ===		
M1	M8-655-410-010	MOTOR ABL-3(W/PCB-H)
=== MISCELLANEOUS ===		
L213	★87-006-174-010	BAR ANTENNA 40
S9	86-536-468-010	LEAF SW(PLAY)
S10	86-550-603-010	LEAF SW(REV PREVENTION)
S11	86-550-603-010	LEAF SW(FWD PREVENTION)
SOL101	86-536-477-010	SOLENOID(MD)
SOL102	86-536-477-010	SOLENOID(REC)

IC BLOCK DIAGRAM

TA7688FS



BA1102FS



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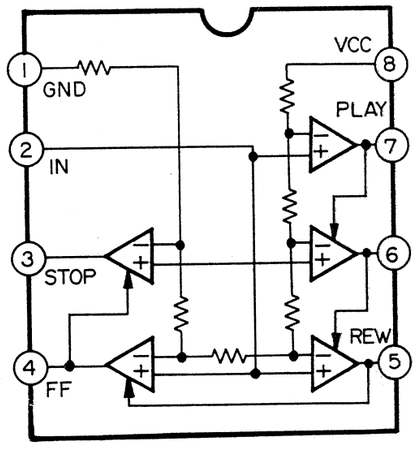
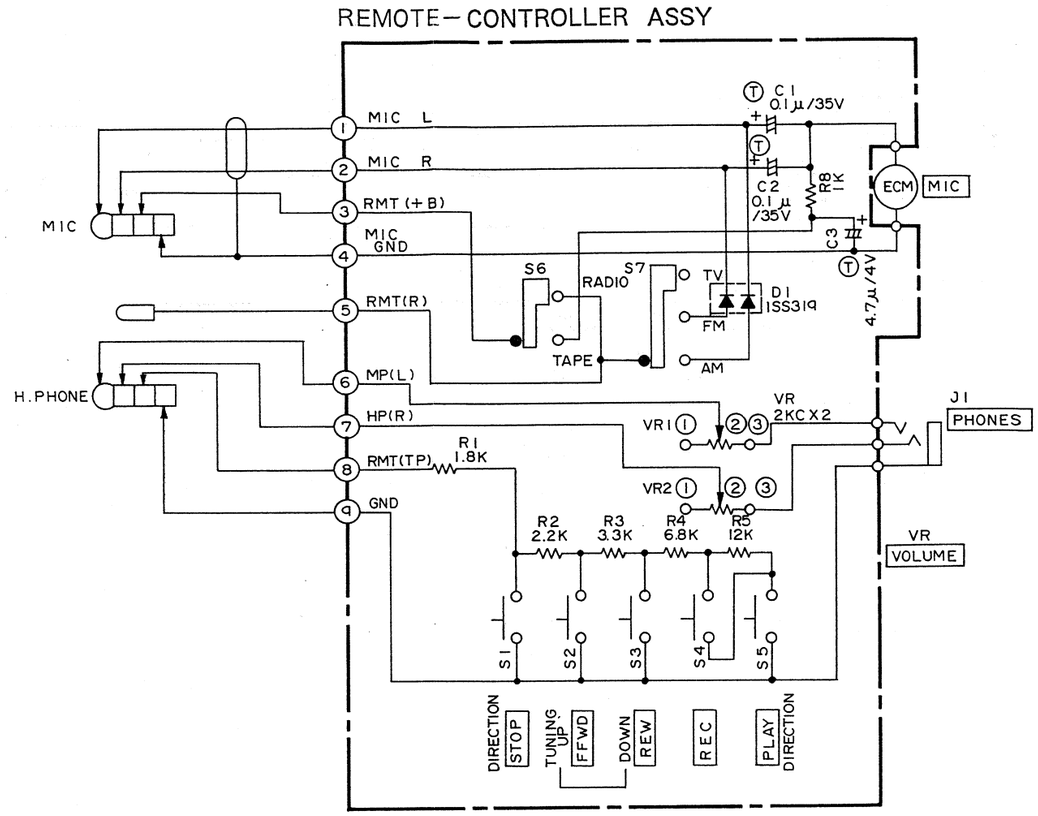
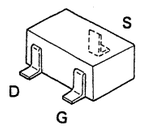
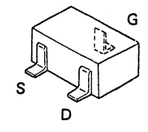


SCHEMATIC DIAGRAM—1





2SK881



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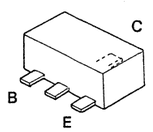
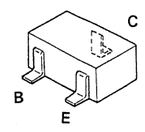
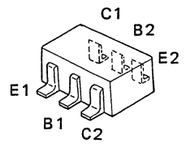


2SA1213



2SA1362
2SA1586
2SA1588
2SC4116
2SC4213
2SC4215
DTC144
RN1304
RN1307



IMD6
HN1A01
HN1C01
HN1C03
RN1607
RN1610
RN2610
RN4607

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip resistor part coding

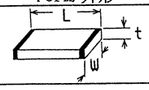
8 8 — □□□ — □□□

A 抵抗コード Resistor code

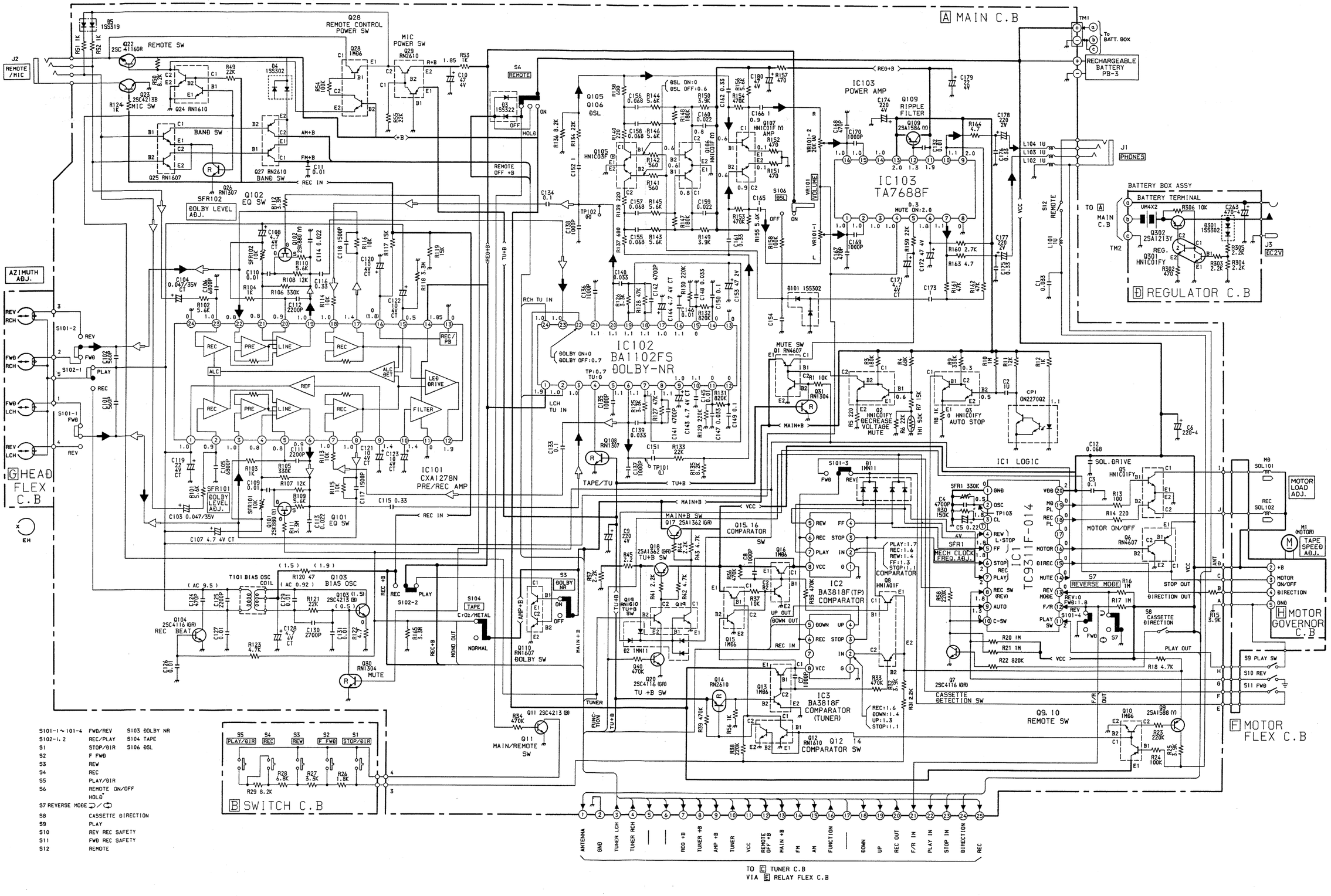
抵抗値 Value of resistor

桁表示 Figure

チップ抵抗
Chip resistor

Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法(mm) Form/外形	L	W	t	Resistor Code : A 抵抗コード : A
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.5 ～0.7	128

SCHEMATIC DIAGRAM—2



S101-1~101-4 FWD/REV
S102-1, 2 REC/PLAY
S1 STOP/DIR
S2 F FWD
S3 REW
S4 REC
S5 PLAY/DIR
S6 REMOTE ON/OFF HOLD
S7 REVERSE MODE
S8 CASSETTE DIRECTION
S9 PLAY
S10 REV REC SAFETY
S11 FWD REC SAFETY
S12 REMOTE
S103 DOLBY NR
S104 TAPE
S106 OSL

D REGULATOR C.B

A MAIN C.B

S8 (CASSETTE DETECTION) a ⊕ bc ⊖ TM1

J3 DC2V

BATT. UM4 x 2

TM2

H MOTOR GOVERNOR C.B VIA F MOTOR FLEX C.B

E RELAY FLEX.C.B (1/2)

To A MAIN C.B

To C TUNER C.B

RECHARGEABLE BATTERY PB—3

S104 TAPE NORMAL ↕ METAL /CrO2

S103 DOLBY NR OFF ↕ DOLBY NR

To C TUNER C.B VIA E RELAY FLEX C.B

To RPH VIA G HEAD FLEX C.B

To B SWITCH C.B

VR101 VOLUME

S102 REC ⟷ PLAY

S101 (FWD/REV) REV. ↕ FWD

G HEAD FLEX. C.B

To A MAIN C.B

RPH

B SWITCH C.B

To A MAIN C.B

S1 STOP/DIR · S3 REW · S5 PLAY/DIR · S2 F FWD · S4 REC

A MAIN C.B

S7 REVERSE MODE

S106 DSL ON ⟷ OFF

S6 REMOTE ON ⟷ HOLD ⟷ OFF

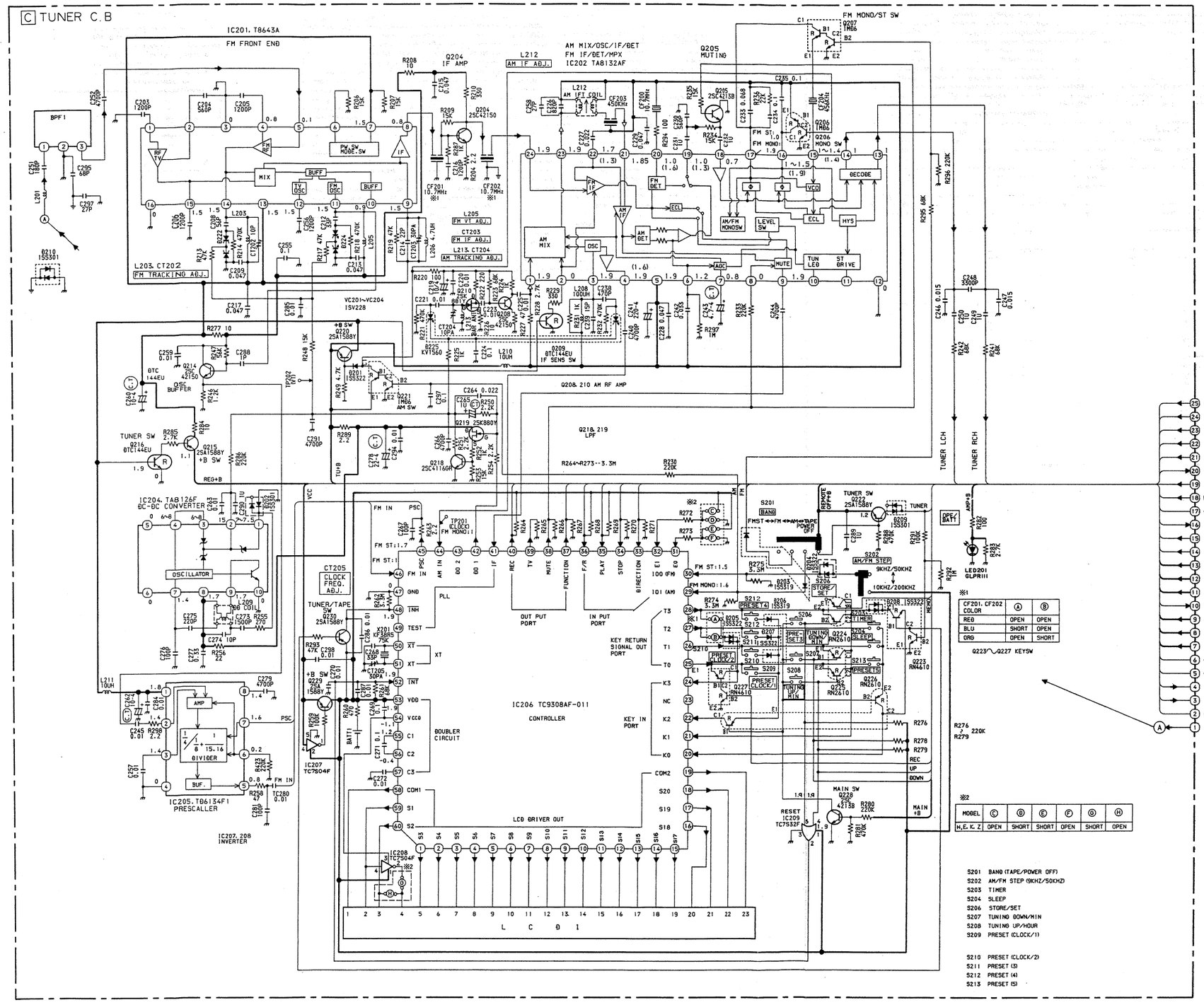
J2 REMOTE/MIC

J1 PHONES

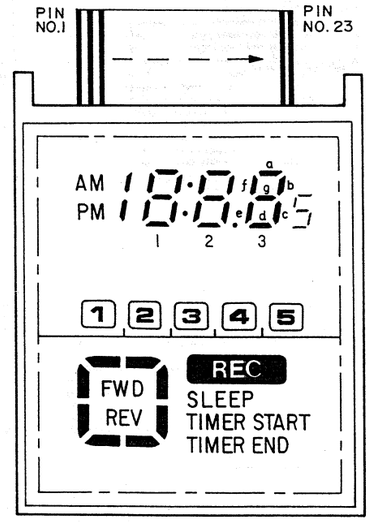
B SWITCH C.B

D REGULATOR C.B

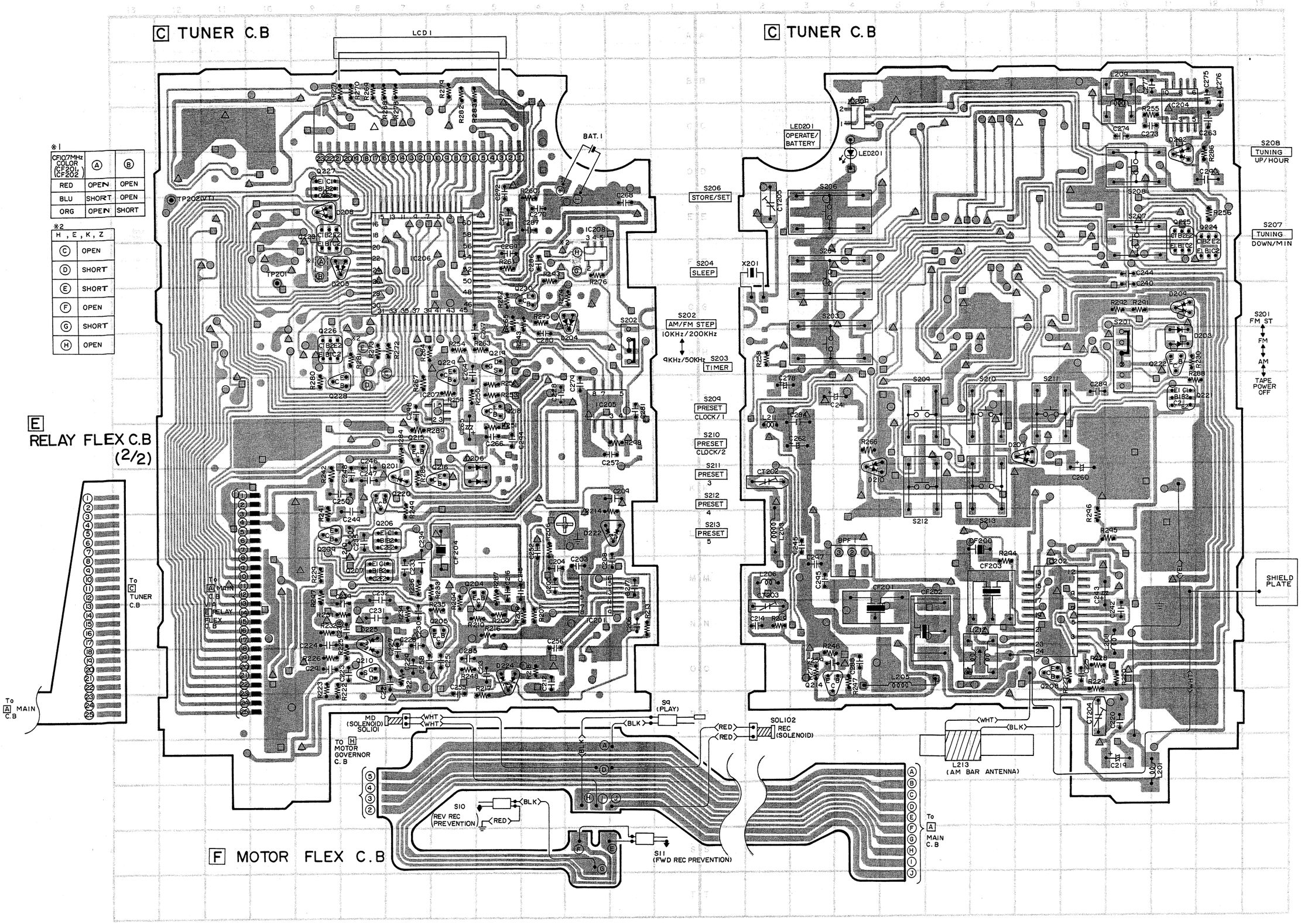
S12 REMOTE



LCD 1



No.	COM. 1	COM. 2
1	COM. 1	
2		
3	REV	FWD
4		
5	1	2
6	PM	3
7	1	AM
8	1d	1e
9	1g	1f
10	1b	1a
11	1c	:
12	2d	2e
13	2g	2f
14	2b	2a
15	2c	.
16	3d	3e
17	3a	3f
18	3g	3b
19	3c	5
20	4	5
21	REC	SLEEP
22	TIMER END	TIMER START
23		COM 2

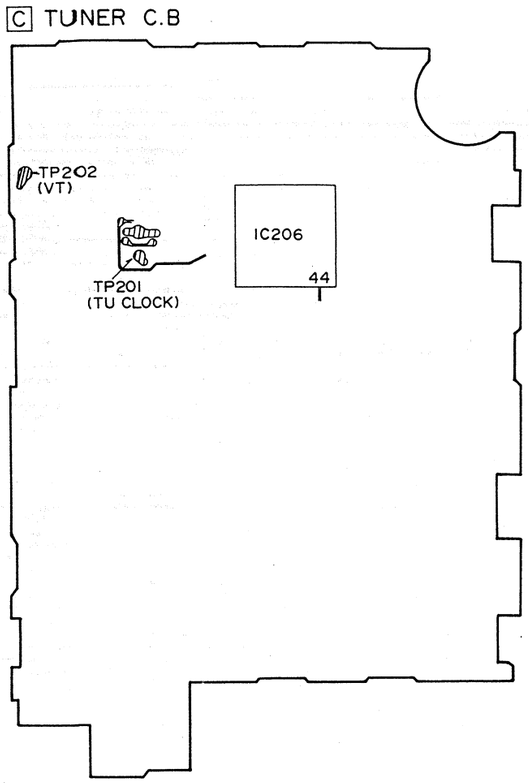


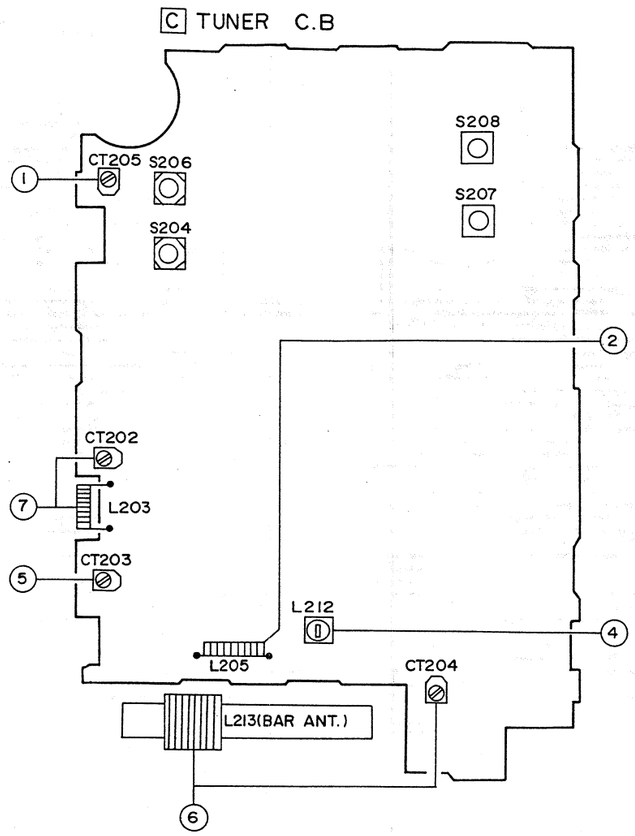
※1

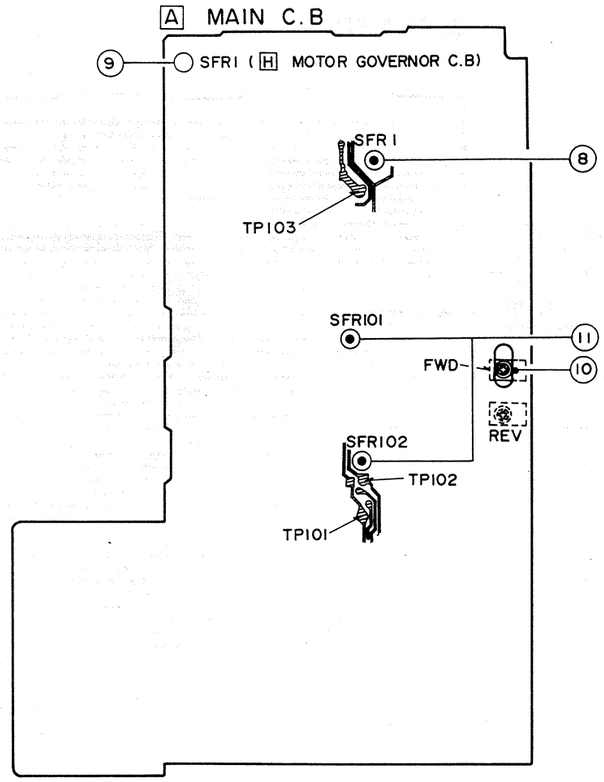
CF107MHz COLOR (CF201) (CF202)	Ⓐ	Ⓑ
RED	OPEN	OPEN
BLU	SHORT	OPEN
ORG	OPEN	SHORT

※2

H, E, K, Z	
Ⓒ	OPEN
Ⓓ	SHORT
Ⓔ	SHORT
Ⓕ	OPEN
Ⓖ	SHORT
Ⓗ	OPEN







1. Tuner Clock Adjustment
   Settings : · Test point : TP201
   · Adjustment location : CT205
   Method : Tune to AM 1611kHz and adjust CT205 so that the frequency at TP201 is 2061kHz±10Hz.

2. FM VT Adjustment
   Settings : · Test point : TP202
   · Adjustment location : L205
   Method : Tune to FM 108MHz and adjust L205 so that the voltage at TP202 is 9.0±0.05V. After adjustment is completed, check that it is 1.0V or more at TP202 with the FM 87.5MHz signal.

3. AM VT Check
   Check that it is 8V or less at TP202 with the AM 1611 kHz signal.

4. AM IF Adjustment
   L212 · · · · · · · · · · · · · · · · · · · 450kHz

5. FM IF Adjustment
   CT203 · · · · · · · · · · · · · · · · · · 10.7MHz

6. AM Tracking Adjustment
   L213 · · · · · · · · · · · · · · · · · · · 603kHz
   CT204 · · · · · · · · · · · · · · · · · · 1395kHz

7. FM Tracking Adjustment
   L203 · · · · · · · · · · · · · · · · · · · 87.5MHz
   CT202 · · · · · · · · · · · · · · · · · · 108.0MHz

8. Mechanism Clock Adjustment
   Settings : · Test point : TP103
   · Adjustment location : SFR1
   Method : Connect a resistor (1MΩ) to TP103. Adjust SFR1 so that the frequency at TP103 is 2900Hz ±50Hz.

9. Tape Speed Adjustment
   Settings : · Test tape : TTA-100(TTA-111S)
   · Test point : PHONES jack
   · Adjustment location : SFR1(H MOTOR GOVERNOR C.B)
   Method : Play back the test tape, adjust for 3000Hz at FWD and ±45Hz at REV mode.

10. Azimuth Adjustment
    Settings : · Test tape : TTS-320(TTA-113B,TCC-152)
    · Test point : PHONES jack
    · Adjustment location : Azimuth adjustment screw
    Method : Play back the 8kHz signal of the test tape, and adjust so that the output becomes maximum at FWD and REV mode.

11. Dolby Level Adjustment
    Settings : · Test tape : TTS-200(TTA-161,TCC-130)
    · Test point : TP101(Lch), TP102(Rch)
    · Adjustment location : SFR101(Lch) SFR102(Rch)
    Method : Connect an electrolytic capacitor (10μF/16V) to measured equipment and TP101(102), adjust for 100mV±10mV at FWD and REV mode.

PRACTICAL SERVICE FIGURE

<RADIO BLOCK>

Sensitivity :	
(IHF, THD, 3%)	FM 14±4dB (97.5MHz)
(S/N 10%)	AM 56±3dB (999kHz)
Intermediate frequency :	FM 10.7MHz
	AM 450kHz
FM stereo separation :	FM 20±4dB (1kHz)

<TAPE RECORDER BLOCK>

Bias frequency :	54kHz
Erasing ratio :	More than 50dB
Distortion :	Less than 3% (PB)
	Less than 10% (REC/PB)
S/N ratio :	48±3dB (PB)
	35±8dB (REC/PB)
Noise level :	Less than 3.5mV (PB,VOL MAX)
	Less than 18mV (PB/REC,VOL MAX)
Wow & flutter :	Less than 0.4% (FWD/REV) RMS
Pinch roller pressure :	150±15 g (FWD/REV)
Take up torque :	27±10 g-cm (FWD/REV)
F.F & REW torque :	80+70 g-cm
Back tension :	3±1 g-cm (FWD/REV)
Frequency response :	63Hz～8kHz ±4.5dB (NORMAL)
	63Hz～10kHz ±5.0dB (CrO_2,METAL)

ADJUSTMENT－2 ／ WIRING－3 (MOTOR GOVERNOR SECTION)

NOTE ON REPLACING THE MOTOR

MOTOR LOAD ADJUSTMENT

The following adjustment should be made after replacing a motor.

As shown figure, connect the counter, ampere meter and power supply.

(1) Adjust SFR1 to be 153Hz±2Hz.

(2) Restrain the motor manually and check that the resultant current is 250mA $^{+10}_{-20}$ mA.
If the current reading does not satisfy the specification, make the adjustment as shown in Table 1.

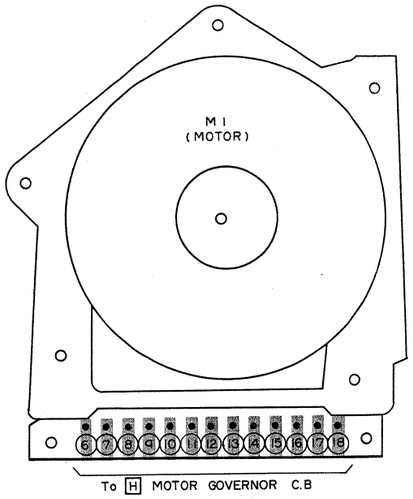
(3) Check that the nonload current is 20mA or less.

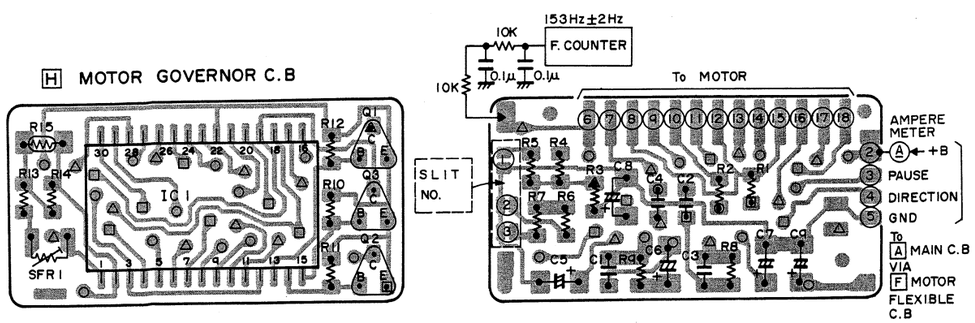
(4) Connect the plus (+) pin of power supply to the DIRECTION terminal to rotate the motor in reverse and check Steps (2) and (3).

(5) Check that Step (3) is satisfied when the motor is rotated in the forward or reverse direction at a supply voltage of 1.7V.

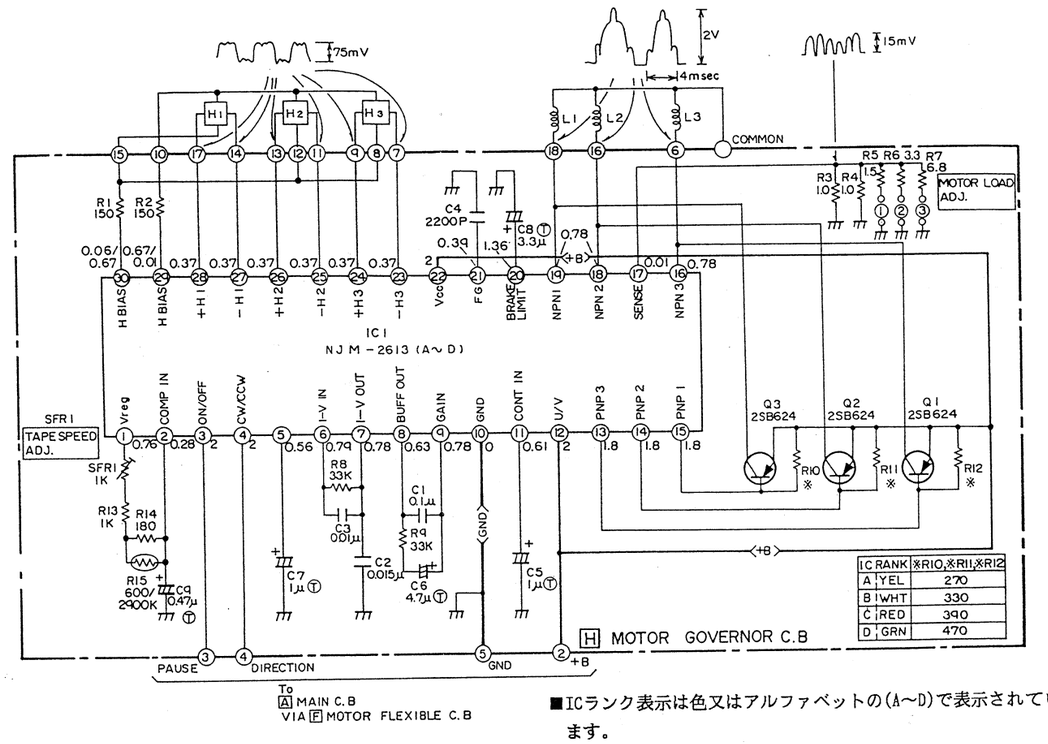
Table 1

CURRENT CHANGE WITH SLITS ①, ② AND ③ SET TO OPEN	SLITS NO.		
	①	②	③
OPEN	OPEN	OPEN	OPEN
+19mA	OPEN	OPEN	SHORT
+25mA	OPEN	SHORT	OPEN
+35mA	OPEN	SHORT	SHORT
+47mA	SHORT	OPEN	OPEN
+50mA	SHORT	OPEN	SHORT
+62mA	SHORT	SHORT	OPEN
+68mA	SHORT	SHORT	SHORT





SCHEMATIC DIAGRAM－4 (MOTOR GOVERNOR SECTION)



■ICランク表示は色又はアルファベットの(A～D)で表示されています。

■The rank of ICs is indicated using colors or letters (A～D).

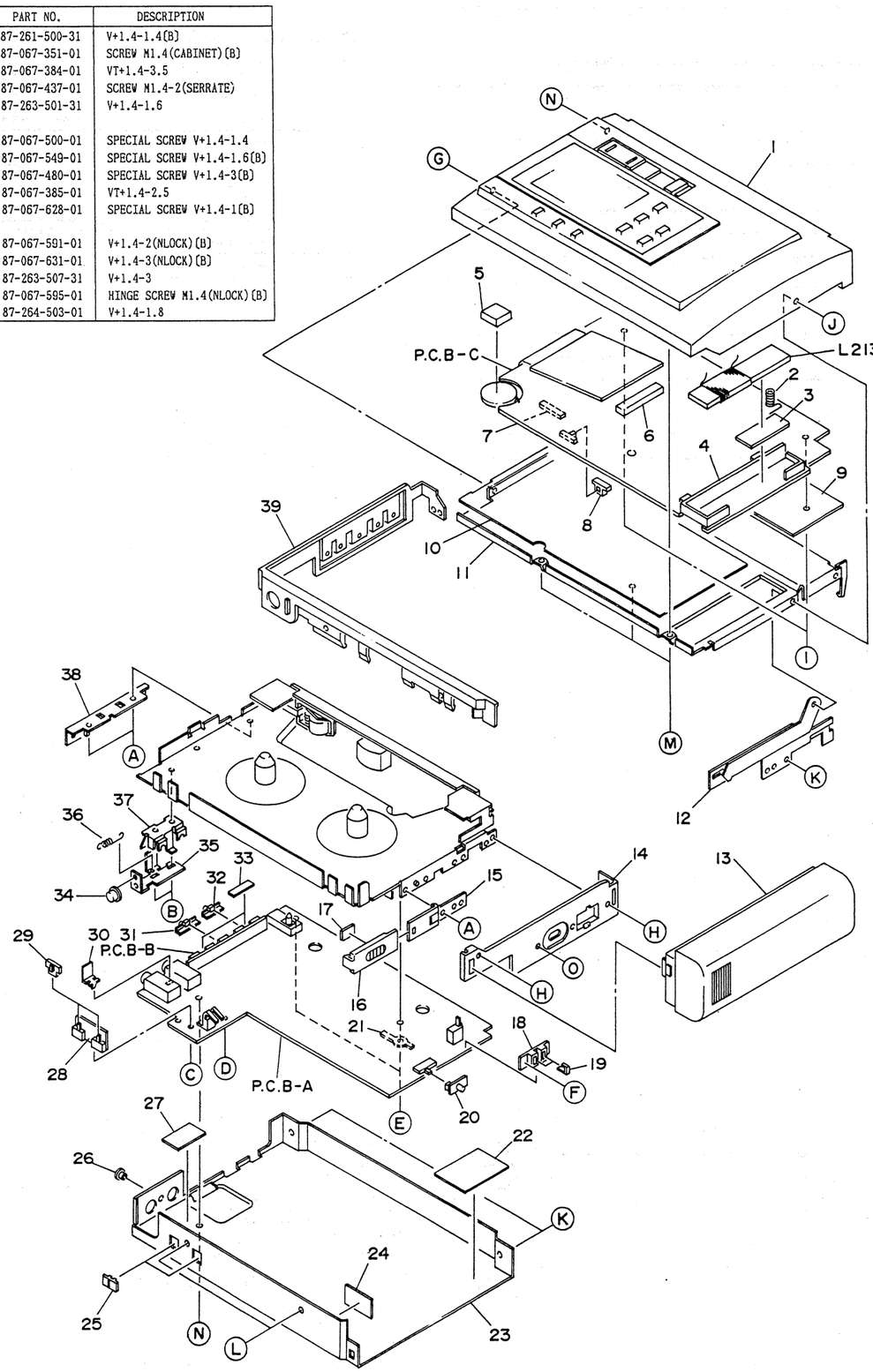
IC DESCRIPTION

TC9311F-014

Pin No.	Pin Name	Description
1	GND	Ground terminal.
2	OSC	Clock oscillation terminal. Generates a 2.85kHz±50Hz clock signal at Vcc (2V).
3	CL	Reset terminal. “LOW” level resets the IC.
4	REW	REW key input. Active “LOW”.
5	FF	FF key input. Active “LOW”.
6	STOP	STOP key input. Active “LOW”.
7	PLAY	PLAY key input. Active “LOW”.
8	REC SW	REC key input. Active “LOW”.
9	AUTO	Tape end sensor input. Performs the AUTO operation when there is no change between “HIGH” and “LOW” for 2.5 seconds.
10	C-SW	Cassette switch terminal. An input key is accepted only at “LOW”; all operations are stopped at “HIGH”. The reset and direction operations are performed when “HIGH” changes to “LOW”.
11	PLAY SW	PLAY SW terminal (Malfunction prevention terminal). “LOW” during play and “HIGH” in other modes.
12	F/R	FWD/REV terminal. FWD at “HIGH” and REV at “LOW”.
13	REV MODE	Determines the tape running mode (↻,↻). ↻ at “HIGH” and ↻ at “LOW”.
14	MUTE	MUTE output. “HIGH” : Start of PLAY, DIRECTION, FF, REW, “LOW” : in other modes.
15	DIRECTION	Motor rotation direction switching output. “HIGH” : FF, “LOW” : in other modes.
16	MOTOR	Motor on/off switching output. The motor stops at “LOW”.
17	——	Unused.
18	REC PL	REC plunger output. “HIGH” output sets the unit to the record mode.
19	MD PL	MD plunger output. “HIGH” output attracts the MD plunger and “LOW” output releases it.
20	V_{DD}	Power terminal.

TC9308AF-011

Pin No.	Pin Name	Description
58	COM1	Common output. } LCD drive outputs.
19	COM2	Common output.
59,60 1~18	S1~20	Segment outputs.
20	K_0	Key return signal inputs for the key matrix.
21	K_1	
22	K_2	
24	K_3	
25	T_0	Key return signal outputs for the key matrix.
26	T_1	
27	T_2	
28	T_3	
29,30	I_{00}, I_{01}	I_{00} H, I_{01} H: Mode 10kHz AM I_{00} H, I_{01} L: Mode 9kHz AM I_{00} L, I_{01} H: Mode FM } Band switching pins.
31,32	E_0, E_1	Pins to select bandwidth and tuning step.
33	DIREC IN	Goes "HIGH" during fast forward (in the forward direction) and rewind (in the reverse direction). Goes "LOW" in modes other than above.
34	STOP IN	Goes "HIGH" when the motor rotates and "LOW" when it is stopped.
35	PLAY IN	Mechanism HEAD UP. Goes "LOW" when switched on.
36	F/R IN	Goes "LOW" when the tape runs forward and "HIGH" when it runs in reverse.
37	FUNC OUT	Goes "HIGH" in the radio operation mode.
38	MUTE OUT	Muting output. "HIGH" level mutes a signal.
39	TV OUT	Unused.
40	REC OUT	Recording output. Goes "HIGH" in the record mode.
41	IF IN	Auto stop input. A signal is input in the MUTE ON mode.
42	D_{01}	Errow output of phase detector. Applies a pulse to the LPF.
43	D_{02}	Unused.
44	AM IN	AM OSC input.
45	PSC	PSC output.
46	FM IN	Receives the prescaler output.
47	GND	Ground pin.
48	$\overline{INH}$	Goes "LOW" when activating the PLL. Goes "LOW" when stopping the PLL (backup mode).
49	TEST	Unused.
50,51	$\overline{XT}$, XT	A crystal oscillator is connected to these pins.
52	$\overline{INT}$	Pin to initialize the IC. "L" input initializes the IC to restore the initial set value and also erases the data from the memory.
53	V_{DD}	Connected to a power supply.
54	V_{CCD}	LCD boosting power supply.
55~57	C1~C3	Capacitors are connected to these pins for an LCD boosting power supply.



EXPLODED VIEW－1

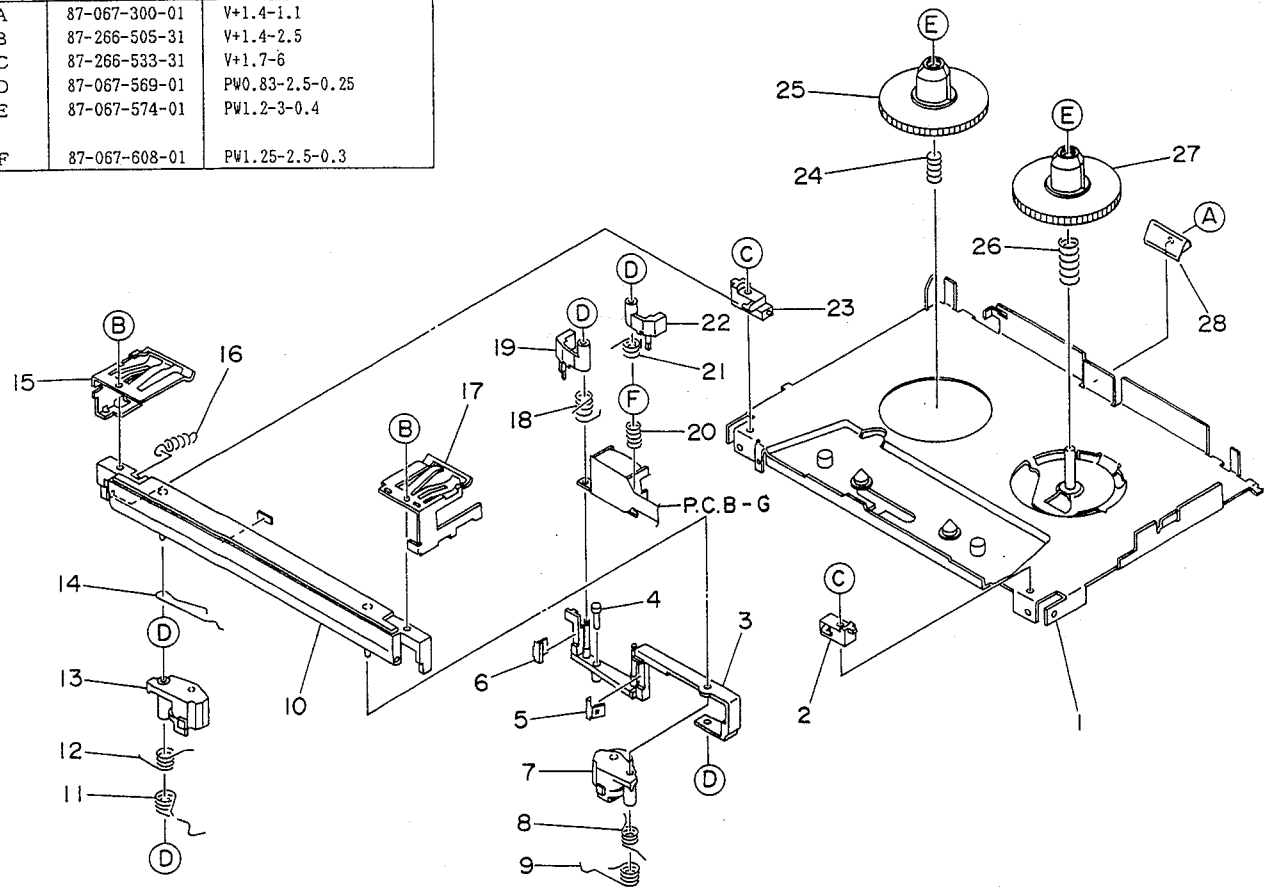
REF.NO.	PART NO.	DESCRIPTION
A	87-261-500-31	V+1.4-1.4(B)
B	87-067-351-01	SCREW M1.4(CABINET)(B)
C	87-067-384-01	VT+1.4-3.5
D	87-067-437-01	SCREW M1.4-2(SERRATE)
E	87-263-501-31	V+1.4-1.6
F	87-067-500-01	SPECIAL SCREW V+1.4-1.4
G	87-067-549-01	SPECIAL SCREW V+1.4-1.6(B)
H	87-067-480-01	SPECIAL SCREW V+1.4-3(B)
I	87-067-385-01	VT+1.4-2.5
J	87-067-628-01	SPECIAL SCREW V+1.4-1(B)
K	87-067-591-01	V+1.4-2(NLOCK)(B)
L	87-067-631-01	V+1.4-3(NLOCK)(B)
M	87-263-507-31	V+1.4-3
N	87-067-595-01	HINGE SCREW M1.4(NLOCK)(B)
O	87-264-503-01	V+1.4-1.8

MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1-1	★09-027-745-010	LID CASSETTE ASSY	*	1
	1-2	★84-500-229-010	C-SPRING,EARTH	*	1
	1-3	★84-500-222-010	CUSHION,ANT	*	1
	1-4	★84-500-205-010	HOLDER,ANT	*	1
	1-5	★84-500-234-010	G CUSHION B	*	1
	1-6	★84-500-209-010	CUSHION,LCD	*	1
	1-7	★84-500-221-010	CUSHION,G	*	1
	1-8	★84-500-020-010	KNOB,SLIDE D	*	1
	1-9	★84-500-208-010	MYLAR,CASSETTE B	*	1
	1-10	★84-500-207-010	MYLAR,CASSETTE A	*	1
	1-11	★84-500-201-110	HOLDER,CASSETTE	*	1
	1-12	---	HOLDER,ASSY		1
	1-13	★09-027-698-010	BATT,BOX ASSY	*	1
	1-14	★84-497-026-110	PANEL,BOTTOM		1
	1-15	★84-497-208-010	HINGE,BATTERY ASSY		1
	1-16	84-497-027-010	LID,BATTERY		1
	1-17	★84-497-230-010	G CUSHION,BATTERY		1
	1-18	★84-497-214-110	HOLDER,CONTACT		1
	1-19	★84-497-215-010	BATTERY,CONTACT A		2
	1-20	★84-497-037-110	KNOB,SLIDE D		1
	1-21	★84-500-224-010	P-SPRING,EARTH	*	1
	1-22	★84-500-233-010	SHEET,CABINET	*	1
	1-23	★84-500-034-010	CABINET,REAR ASSY	*	1
	1-24	★84-500-227-010	MYLAR,CABINET A	*	1
	1-25	★84-500-013-010	KNOB,SLIDE B	*	2
	1-26	★84-500-021-110	SPACER,JACK	*	1
	1-27	★84-500-231-010	MYLAR,JACK	*	1
	1-28	★84-500-204-110	HOLDER,SWITCH	*	1
	1-29	★84-500-206-010	CAP,SWITCH	*	2
	1-30	★84-500-219-010	P-SPRING,JACK	*	1
	1-31	★84-497-028-010	KNOB,SLIDE A		1
	1-32	★84-497-029-010	KNOB,SLIDE B		1
	1-34	★84-500-011-010	BUTTON,OPEN	*	1
	1-35	★84-500-203-110	LEVER,OPEN	*	1
	1-36	★84-500-217-010	E-SPRING,OPEN	*	1
	1-37	★84-500-202-010	HOLDER,JACK	*	1
	1-38	★84-500-213-010	HOLDER,TACT	*	1
	1-39	★09-027-701-010	FRAME,CENTER ASSY	*	1
		★09-027-703-010	APPEARANCE SCREW KIT	*	1

EXPLODED VIEW－2

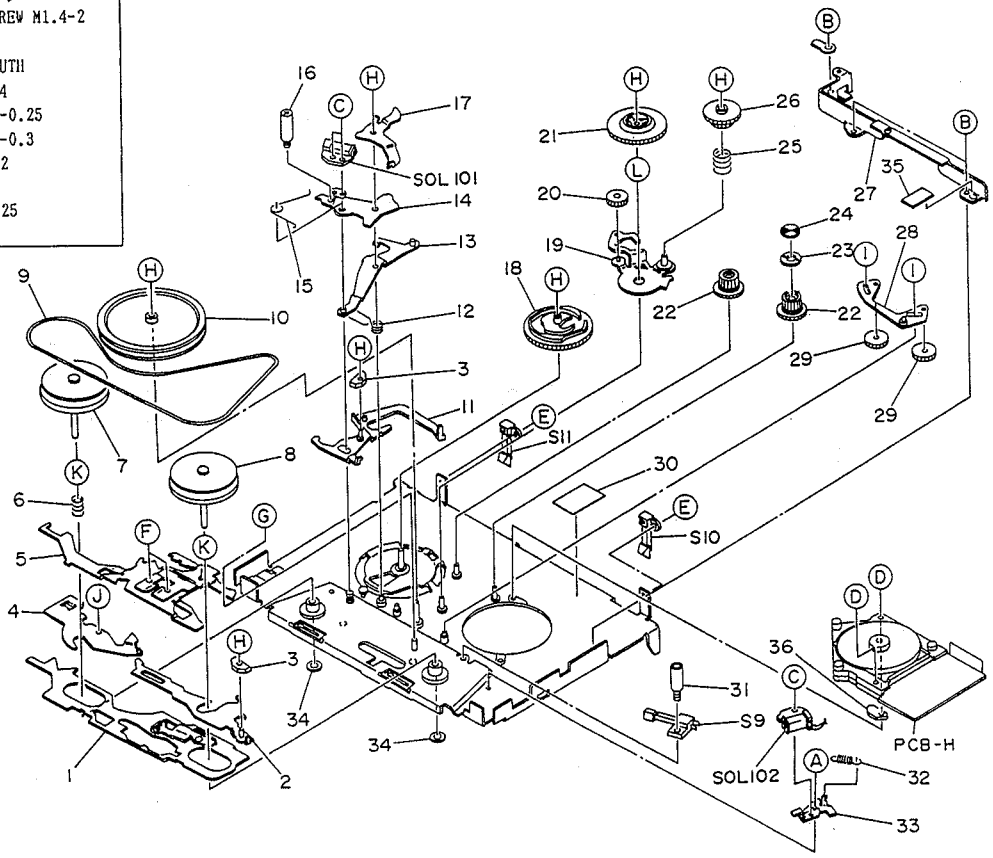
REF.NO.	PART NO.	DESCRIPTION
A	87-067-300-01	V+1.4-1.1
B	87-266-505-31	V+1.4-2.5
C	87-266-533-31	V+1.7-6
D	87-067-569-01	PW0.83-2.5-0.25
E	87-067-574-01	PW1.2-3-0.4
F	87-067-608-01	PW1.25-2.5-0.3



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	2-1	★86-550-360-110	CHASSIS REC ASSY		1
	2-2	★86-550-289-110	HOLDER R		1
	2-3	★86-550-333-010	ARM HEAD REC ASSY		1
	2-4	★86-550-335-010	SHAFT,AZIMUTH REC		1
	2-5	★86-550-359-010	SHEET,EH R		1
	2-6	★86-550-352-010	SHEET,EH L		1
	2-7	86-550-224-010	LEVER,PINCH R ASSY		1
	2-8	★86-550-275-010	T-SPRING,PLAY BACK R		1
	2-9	★86-550-346-010	T-SPRING,PINCH RJ		1
	2-10	★86-550-219-010	HOLDER,CASSETTE ASSY		1
	2-11	★86-550-348-010	T-SPRING,PINCH LJ		1
	2-12	★86-550-274-010	T-SPRING,PLAY BACK L		1
	2-13	86-550-222-010	LEVER,PINCH L ASSY		1
	2-14	★86-550-343-010	T-SPRING,HEAD BACK J		1
	2-15	★86-550-216-010	P-SPRING,HOLDER L		1
	2-16	★86-550-278-010	E-SPRING,HOLDER C		1
	2-17	★86-550-217-110	P-SPRING,HOLDER R		1
	2-18	★86-550-319-010	T-SPRING,AZIMUTH L		1
	2-19	★86-550-349-010	ARM,EH L ASSY(W/EH)		1
	2-20	★86-550-358-010	C-SPRING,AZIMUTH		1
	2-21	★86-550-321-010	T-SPRING,AZIMUTH R		1
	2-22	★86-550-350-010	ARM,EH R ASSY(W/EH)		1
	2-23	★86-550-290-110	HOLDER L		1
	2-24	★86-550-288-110	C-SPRING,REEL GEAR L		1
	2-25	★86-550-240-010	GEAR,REEL L		1
	2-26	★86-550-279-010	C-SPRING,GEAR R		1
	2-27	★86-550-285-010	GEAR,REEL R		1
	2-28	★86-550-218-010	P-SPRING,CASSETTE ASSY		1

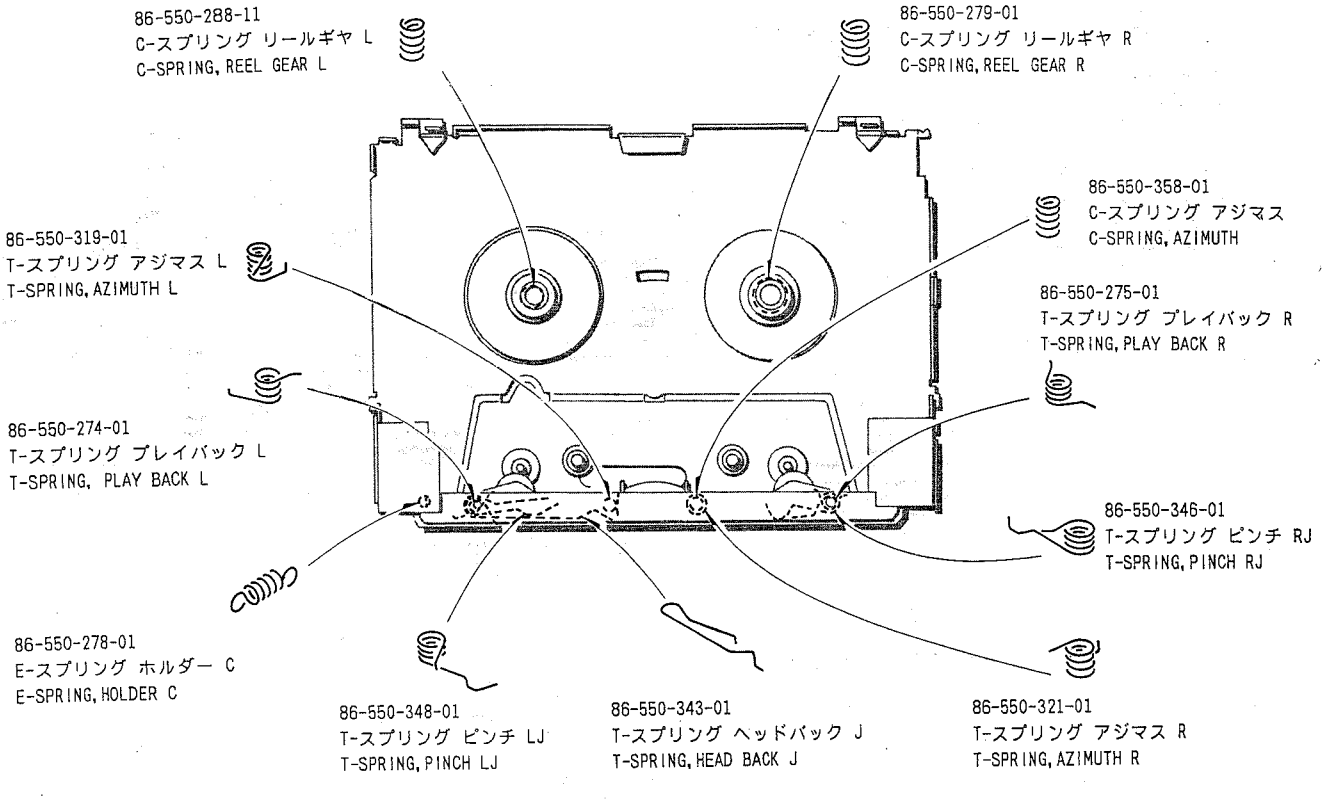
EXPLODED VIEW—3

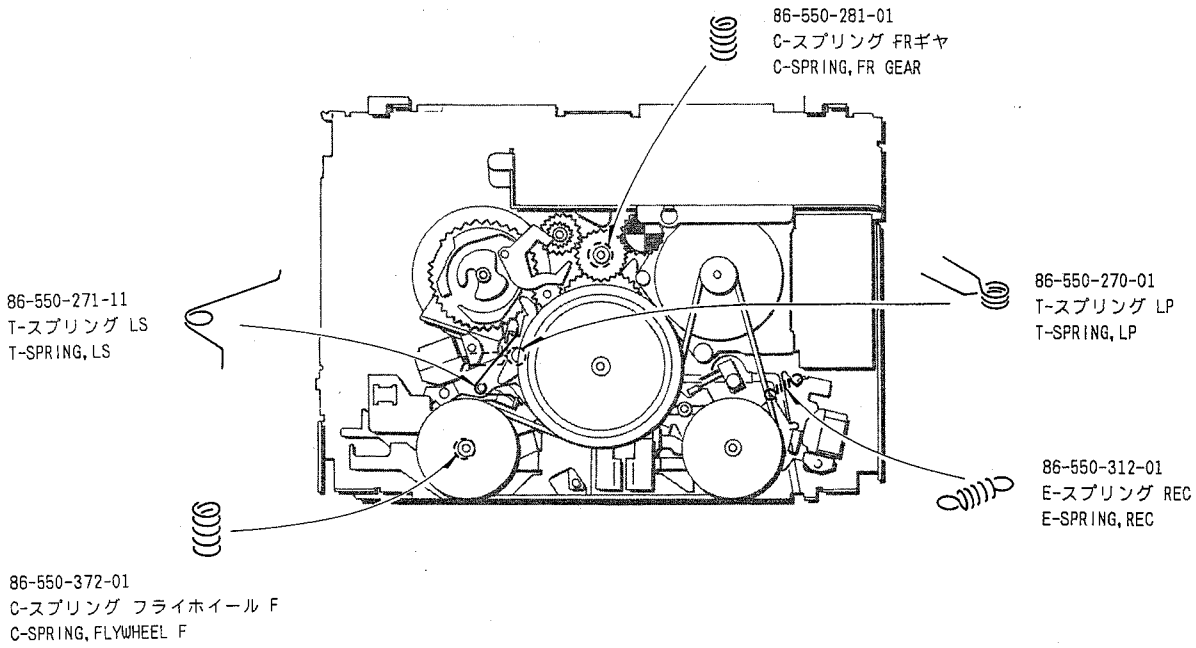
REF.NO.	PART NO.	DESCRIPTION
A	87-067-300-11	V+1.4-1.1(B)
B	87-261-500-31	V+1.4-1.4
C	87-067-560-01	V+1.4-2.5
D	87-262-510-31	V+1.4-4.5(B)
E	87-067-511-01	SPECIAL SCREW M1.4-2
F	86-550-341-01	SCREW AZIMUTH
G	87-067-609-01	PWO.8-3-0.4
H	87-067-569-01	PWO.83-2.5-0.25
I	87-067-623-01	PWO.85-3.2-0.3
J	87-067-563-01	PW1.2-3-0.2
K	87-067-370-01	RW1.2-3-0.25
L	86-550-268-01	STE0.8-5



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	3-1	★86-550-338-010	LEVER,EH ASSY		1
	3-2	★86-550-302-010	LEVER,REC ASSY		1
	3-3	---	PLATE MR2		2
	3-4	★86-550-311-010	LINK REC SW ASSY		1
	3-5	★86-550-313-010	LEVER,HEAD TURN J ASSY		1
	3-6	★86-550-372-010	C-SPRING,FLYWHEEL F		1
	3-7	86-550-315-010	FLYWHEEL REC ASSY		1
	3-8	★86-550-354-010	FLYWHEEL REC-T ASSY		1
	3-9	86-550-325-010	BELT J		1
	3-10	★86-550-242-010	GEAR,PULLY		1
	3-11	★86-550-211-110	LEVER,SOLENOID ASSY		1
	3-12	★86-550-270-010	T-SPRING,L P		1
	3-13	★86-550-334-010	LEVER,PLAY CL J ASSY		1
	3-14	★86-550-286-310	PLATE SOLENOID		1
	3-15	★86-550-271-110	T-SPRING,L S		1
	3-16	★86-550-293-010	SHAFT P SOLENOID		1
	3-17	★86-550-204-110	LEVER,LOCK		1
	3-18	★86-550-347-010	GEAR,CAM REC		1
	3-19	86-550-368-010	LEVER,FR J ASSY		1
	3-20	★86-550-241-010	GEAR,CAM C		1
	3-21	★86-550-232-010	SLIP GEAR ASSY		1
	3-22	★86-550-237-010	GEAR,FR C		2
	3-23	★86-550-236-110	DISK AUTO		1
	3-24	★86-550-606-010	SHEET,AUTO		1
	3-25	★86-550-281-010	C-SPRING,FR GEAR		1
	3-26	★86-550-238-010	GEAR,FR		1
	3-27	★86-550-203-010	HOLDER BATTERY		1
	3-28	★86-550-336-010	LEVER,PLAY J ASSY		1
	3-29	★86-550-239-010	GEAR,PLAY		2
	3-30	★86-550-367-010	MYLAR 14-17-0.05		1
	3-31	★86-550-292-110	SHAFT,P SW		1
	3-32	★86-550-312-010	E-SPRING,REC		1
	3-33	★86-550-317-010	REC PLATE SOLENOID		1
	3-34	★87-067-571-010	SOMASHEET 0.8-2.6-0.3 CUT		2
	3-35	★86-550-301-010	MYLAR 5-10-0.5		1
	3-36	★86-554-019-010	SPACER B		1

SPRING APPLICATION POSITION





■ ACCESSORIES／PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1	★84-500-904-010	INSTRUCTION BOOKLET	*	1
	2	★84-462-953-010	CARRYING CASE(E)		1
	3	★09-027-698-010	BATT BOX ASSY (B)	*	1
	4	★84-500-952-010	RC-J30(E)	*	1
	5	87-042-053-010	AC-207H(H,H1)		1
	6	87-042-055-119	AC-207E(E,Z)		1
	7	87-042-056-010	AC-207K(K1)		1
	8	★87-047-100-010	PB-3Y		1
	9	87-048-153-010	HP-M16(H,E,Z)		1
	10	87-048-162-010	HP-19 BK(H1,K1)		1